May 23, 1950 P. J. HARNEY 2,508,944

CAN OPENER

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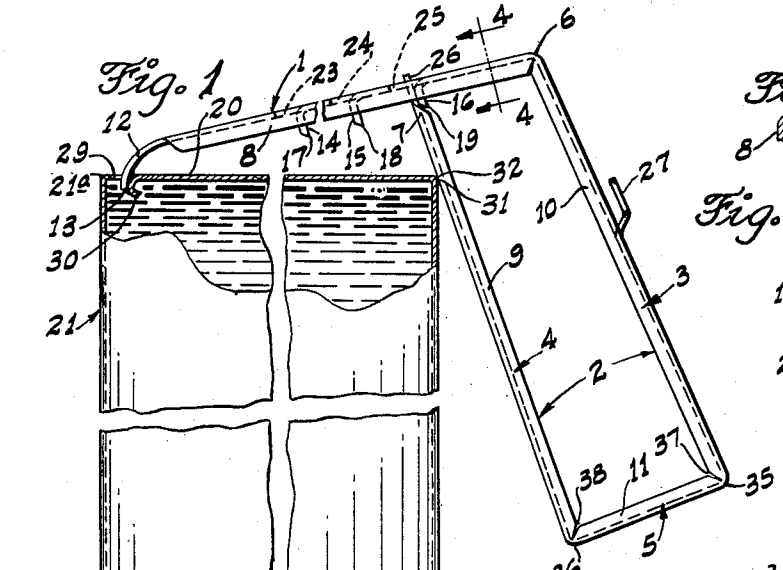


Fig. 1

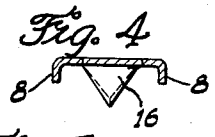


Fig. 4

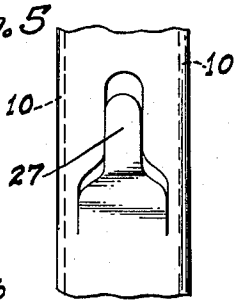


Fig. 5

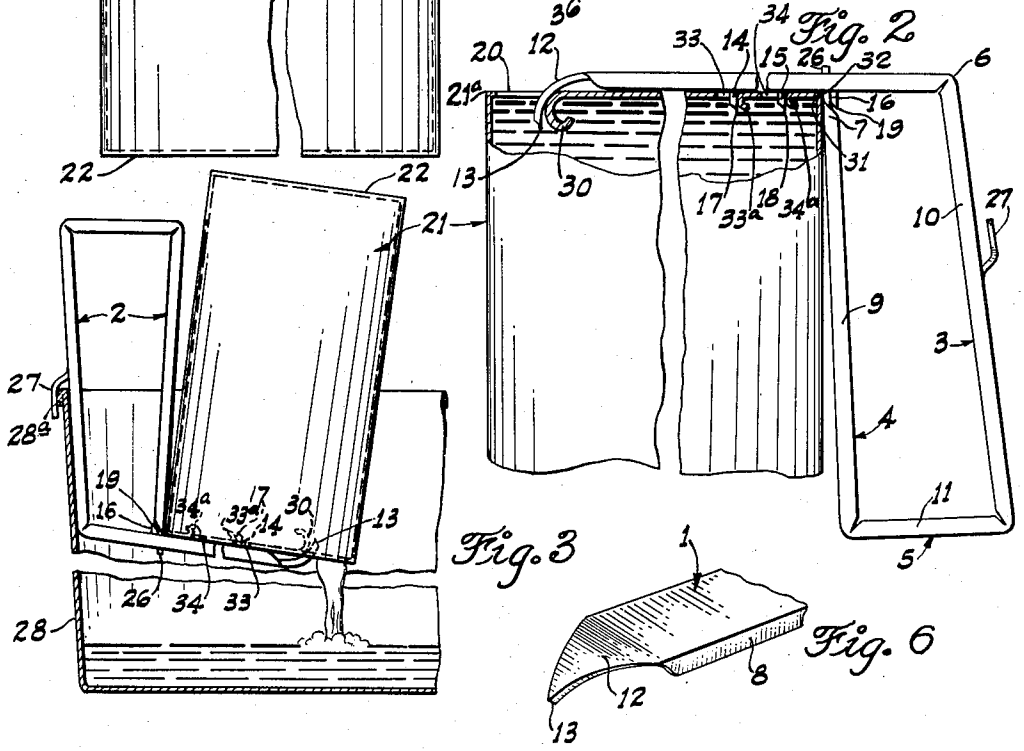


Fig. 2

Fig. 3

Fig. 6

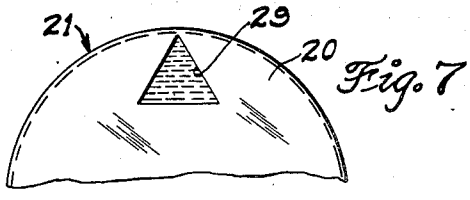


Fig. 7

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CAN OPENER

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9 Claims. (Cl. 30—16)

1

The present invention relates to a device for providing an opening or openings in cans or like containers for affording a facile dispensing of the contents of the can.

Among the objects of the invention is to provide a novel device having arms or legs which are disposed at preferably an angle greater than a right angle, of which one of the arms may have means to effect an opening or openings in a wall, such as a top wall, of the can, and the other arm may be pressed against and moved along a corner portion or edge portion of the can, such as a rim portion, or edge portion, or shoulder portion of the can whereby when the device is forced against and along such portion of the can, the latter arm may slide therealong in a sort of wedging action and cause the other arm to be drawn, with its means for causing an opening, along such wall, such as the end wall, to effect, as by puncturing and shearing, an opening in such wall, with or without also effecting a vent opening or openings also in such wall, as desired.

Another object of the invention is to provide a novel device as referred to with one of the arms of the device adjustable with reference to the other for adapting the application of the device to different sizes of cans or receptacles or the like.

A further object of the invention is to provide a novel device as referred to with means for holding the device and a can held by the device on a receptacle into which the contents of the can may flow from such can.

Other objects, advantages, capabilities, features, and the like are comprehended by the invention as will later appear and as are inherently possessed by the invention.

Referring briefly to the drawings:

Fig. 1 is a view in elevation of a device constructed in accordance with the invention;

Fig. 2 is a similar view showing the device in a stage of operation or use;

Fig. 3 is a similar view showing the device in another stage of use;

Fig. 4 is a transverse sectional view of a part of the device taken in a plane represented by line 4—4 in Fig. 1 of the drawings;

Fig. 5 is a fragmentary elevational view of a detail of the device;

Fig. 6 is a fragmentary perspective view of a part of the device; and,

Fig. 7 is a fragmentary top plan view of a can after operation thereon.

Referring more in detail to the drawings, the embodiment chosen to illustrate the invention is

2

shown as comprising legs or arms 1 and 2 of which the latter has an arm or leg part 3 and an arm or leg part 4 with a connecting part 5 at an end of the parts 3 and 4, the part 3 being shown connected to an end portion of the leg or arm 1 as forming a corner or knee 6, and the part 4 has an end portion 7 which is releasably engaged with the leg or arm 1. The arms or legs 1 and 2 have side flanges 8, 9, 10 and 11 which act as reenforcing means for the legs or arms 1 and 2. The arm or leg 1 may be termed a piercing arm or leg, and the leg or arm 2 may be termed a wedging leg or arm.

At the end of the arm 1, is a curved or tapered blade 12 having a puncturing or cutting point 13, and at suitable intermediate points of the arm 1 are provided blades 14, 15, 16 which are tapered and have punching or cutting points 17, 18, 19 adapted to puncture and cut holes in an end wall 20 of a can 21. These blades 14, 15, 16 are preferably punched from a web of the arm 1 in a known manner, thus leaving holes 23, 24, 25 in the web of the arm 1. The other end of the can 21 has an end wall or bottom wall 22.

The free end portion 7 of the arm part 4 is provided with a tongue 26 adapted to extend in any one of the holes 23, 24, 25 and to abut against the corresponding blade 14, 15, 16. The arm 2 and its parts 3, 4 and 5 has enough resiliency to permit the arm part 4 with its tongue 26 to be retracted from the hole 23, or 24, or 25 and from abutting engagement with the blade 14, or 15, or 16, for adjustment to a particular size of can 21, to be opened, and for adjusted insertion of the tongue 26 in another hole, such as hole 24, or 25, or 23, and the abutment with a blade, such as blade 15, or 16, or 14, as the case may be. In Figs. 1, 2 and 3 the device is shown as applied to a largest size can 21. While only three adjustments are shown for applying the device to three sizes of cans it is to be understood that the invention is not limited thereto but may have any number of adjustments by providing correspondingly more blades, like blades 14, or 15, or 16, as desired.

The arm 2 may have at a suitable point a hook or the like 27 adapted to be hooked over or otherwise engaged to a rim 28a of a receptacle or the like 28 into which oil or the like may flow or drain from the can 21 (see Fig. 3).

In operation or use when it is desired to open and have access to the contents of the can, such as can 21, the device is applied as shown in Fig. 1 with the blade 12—13 near an edge portion 21a of a wall, such as a top wall 20, so that by ap-

plying pressure to the blade portion 12—13, it may be made to enter the can by the point 13 puncturing or piercing a hole and the blade 12 cutting or shearing in the top wall 20 to produce a sort of V-shaped opening 29 with a resulting inwardly curled lip 30. At the same time the arm 2 is brought against an opposite corner or edge portion 31 of the can so that the arm part 4 will engage such corner 31 as at a point 32 which is more remote from the hole 29 than the upper end portion 7 of the arm portion 4 so that as further pressure is applied to the device and the upper portion of the arm part 4 is forced or wedged down the blade 12—13 will have a drawing cutting action to shear more of the can top 20 to produce a more curled lip 30 as shown in Fig. 2, and also offering an amply large opening 29 through which the contents of the can 21 may be later freely discharged when the can is tipped or inverted as shown by way of example in Fig. 3.

Toward the end of the down stroke of the device the blade points 17, or 17 and 18, as the case may be, depending on the size of the can 21, of the blades 14, or 14 and 15 will enter into the top 20 and produce a hole or holes 33, or 33 and 34 which will act as displacement air vent opening or openings to afford a free dispensing of the contents of the can (see Fig. 3). Since the blade or blades 14, or 14 and 15 are tapered and also since the points 17, or 17 and 18 are tapered or beveled, and also because of the angular disposition of the blades 14, 15 and of the arm part 4, there will be also a lateral shearing action so as to produce the openings 33, 34 of more or less triangular shape and clear from or of the inwardly projecting portions of the blades 14, 15, portions of the top 20 being thus curled in to form the curled lips or the like 33^a, 34^a, as shown in Figs. 2 and 3. The blade 16 being at an end of the series acts as a stop or shoulder for the end of the arm part 4 when opening a largest sized can, while the blade 15 will act as a stop for the tongue 26 when opening a smallest sized can; the blade 14 at the other or inner end of the series acting to open up a vent hole, such as hole 33. It will be understood that the intermediate blade 15 is shown merely by way of illustration and that there may be any number of intermediate blades 15 depending upon the run or range of sizes of the cans to be opened up by the device of this invention.

For the purpose of causing the arm part 4 to be readily adjustable to contact the tongue 26 selectively and adjustably with any of the blades 14, 15, 16, the arm 2 may have as at the corners 35 and 36 thereof (see Fig. 1) notches or the like 37 and 38 provided in the flanges 9, 10 and 11 to allow a resilient flexing sufficient to permit the desired adjustment to the particular size of can being opened.

While I have herein described and upon the drawings shown a structure or embodiment chosen to illustrate the invention it is to be understood that the invention is not limited thereto but comprehends other constructions, details, arrangements of parts, features and the like without departing from the spirit of the invention.

Having thus disclosed the invention, I claim:

1. A can opener comprising arms which are disposed at an angular relation greater than a right angle and of which an arm has means for effecting an opening in a wall of a can and the other arm has means for wedging against a portion of the can when causing said first arm to effect said opening, and wherein said wedging arm has an arm portion which is selectively adjustable to vary the angular relation of said arms and in which said first arm and said arm portion have engageable parts for maintaining the selected adjustable relation thereof.

2. A can opener as set forth in claim 1, and wherein said first arm and said arm portion have tongues which are engageable with each other in their selected adjustable relation.

3. A can opener comprising arms which are disposed at an angular relation greater than a right angle and of which an arm has means for effecting an opening in a wall of a can and the other arm has means for wedging against a portion of the can when causing said first arm to effect said opening, said opening means comprising a blade in an end of said first arm to effect an opening in said wall portion of said can, and wherein said first arm also has an additional blade at an intermediate point of said first arm to effect a vent opening in said top of said can, and wherein said wedging arm has an arm portion which is selectively adjustable to vary the angular relation of said arms in which said first arm and said arm portion have engageable parts for maintaining the selected adjustable relation thereof.

4. A can opener as set forth in claim 3, and wherein said first arm and said arm portion have tongues which are engageable with each other in their selected adjustable relation.

5. A can opener comprising arms which are disposed at an angular relation greater than a right angle and of which an arm has means for effecting an opening in a wall of a can and the other arm has means for wedging against a portion of the can when causing said first arm to effect said opening, said opening means comprising a blade in an end of said first arm to effect an opening in said wall portion of said can, wherein said blade is tapered and curved and has a point for entering in said wall portion of said can to effect a free opening in said wall portion, wherein said first arm also has an additional blade at an intermediate point of said first arm to effect a vent opening in said top of said can, wherein said additional blade is tapered and has a point for entering said wall portion of said can to effect a free vent opening in said wall portion, and wherein said wedging arm has an arm portion which is selectively adjustable to vary the angular relation of said arms and in which said first arm and said arm portion have engageable parts for maintaining the selected adjustable relation thereof.

6. A can opener as set forth in claim 5, and wherein said first arm and said arm portion have tongues which are engageable with each other in their selected adjustable relation.

7. A can opener comprising a pressure arm having a blade for effecting an opening in a wall of a can, a wedging arm connected to said pressure arm at an end thereof and having an arm segment which is adjustable relative to the remainder of said wedging arm, and interengageable members carried by said pressure arm and said arm segment for holding said arm segment in selected adjusted relation.

8. A can opener as set forth in claim 7, and wherein said arm segment in any of its adjusted positions bears an angular relation to said pressure arm greater than a right angle.

9. A can opener as set forth in claim 8, and wherein said first arm also has an additional

blade at an intermediate point of said first arm to effect a vent opening in said top of said can.

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